Product Catalog

The OrigaLys' solutions fit your needs

OrigaLys ElectroChem SAS

More than 20 years know-How

Instruments
for
Electrochemical Analytical Systems

Electrochem OrigaLys

2010 – ORIGALYS – 2015
5 ANS YEARS AÑOS
MERCI – THANK YOU – GRACIAS

The Company

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OrigaLys was founded in 2010, by R&D Engineers coming from a famous French Manufacturer of Potentiostat, Galvanostat and Impedancemeter (EIS), based in Lyon, France. It's started within Cap-Services Incubator.
Our goal is to propose to the customer "design" products with an affordable price and a high level of quality.

With a minimum of 20 years background and knowledge in electrochemistry and a worldwide distributor network, the company is able to provide a complete range of Instruments: Potentiostat, Galvanostat, Impedancemeter, Multi-Channels and Rotating Disc Electrode, Software, Electrodes and other Accessories (tips, pellets, corrosion cells, and so on).

In December 2012, **OrigaLys** became: **OrigaLys ElectroChem SAS**

Full Range of Products

4 ORIGASTAT

Potentiostat
Galvanostat
Impedancemeter
pH-meter and T°C.
RDE Speed
Controller
Ideal for Education

9 ORIGABOOKST

Current
Booster
From 5A/20V
to
20A/20V

10 LANDSTAT

Potentiostat
Galvanostat
Impedancemeter
pH-meter and T°C
RDE Speed
Controller
. Ideal for the field

12 ORIGATROD KIT

OrigaTrod: Rotating Disc Electrode (RDE)
From 100 to 10,000 rpm
With Optical Digital Encoder
OrigaBox: RDE Speed Controller
Control Panel: software to drive the OrigaBox

14 ORIGAMµ

Very Low Current
Probe

Down to 1pA with
a 30aA resolution

15 ORIGAFLEX

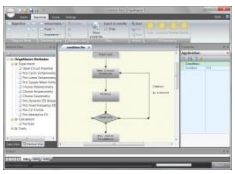
Potentiostat, Galvanostat
and Impedancemeter (optional)
Flexible and modular Multi-Channels
« Built your own system »
500mA, 1A or 5A

23 ORIGACYCLER

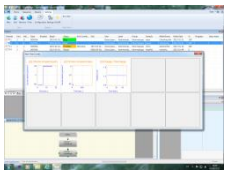
Battery Testing
System

Channels:
500mA, 1A, 5A
and 10A

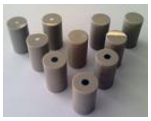
27 ORIGASOFT

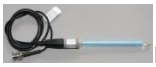


OrigaMaster:
software for Potentiostat
OrigaViewer:
for Multi-Channels system
and Battery Testing



34 ORIGALINE





Glass Electrodes,
Static Electrode
Tips, Pellets,
Sample Holder,
Magnetic Stirrer,
ElectroChemical Cells,

The OrigaStat range

The OrigaStat range and its software, OrigaMaster are a new wave in the Electrochemistry instrumentation world.

The OrigaStat line is light, compact and easily transportable. It benefits of an attractive shape.
With this new kind of Potentiostat, Galvanostat and Impedancemeter (100µHz - 1KHz), the user is the designer. With a benefit of over 20 years of experience in Electrochemistry measurement device, the OrigaStat line follows the needs of users.

The OrigaStat has been designed for Research and Education. But, it can also address any electrochemical measurement, such as research, corrosion, coatings, sensors and so on.

OGS080
±100 mA / ±17.5 V

OGS100
±100 mA / ±17.5 V

OGS200
±2 A / ±35 V

All Included

- Potentiostat
- Galvanostat
- Impedancemeter EIS: 1kHz
- RDE Speed Controller
- pH Meter *
- Temperature Probe *

Option

- Plastic cover Beaker Holder
- Magnetic stirrer
- RDE Rotating Electrode

* Except for OGS080

Entry level of the OrigaStat Line

This Potentiostat, Galvanostat, Impedancemeter from **OrigaLys Electrochem SAS** was specially designed for Education:

- Tutorials can be easily prepared in advance and protected by the plastic cover
- Complete solution: Potentiostat, Galvanostat, Impedancemeter (100 µHz - 1 KHz), RDE Speed Controller, PC Software
- Easily transportable
- Everything is adjustable or removable: the lighted cell and the beaker holder.
- A magnetic stirrer can also be adpated if needed

Options

- **OrigaCell Kit**

Orange Plastic cover, lighted and removable cell, beaker holder (with adjustable height) and removable base

- **OrigaMix**

Magnetic Stirrer

- **OrigaTrod**

Rotating Disc Electrode (RDE)

- **OrigaLine**

Static Electrodes, Glass Electrodes, Tips, Sample Holder, ElectroChemical Cell, and so on.

Main Technical Specifications	
Electrode connections	2, 3 and 4
Max potential applied	±5 V
Compliance voltage	±17.5 V
Maximum current	±100 mA
Current ranges	1 nA to 100 mA in 9 decades
Potential accuracy	< 0.1 % FSR (Full Scale Range)
Potential resolution	30 nV
Current accuracy	< 0.1 % FSR
Current resolution	0.003 % FSR
Input impedance	1 TΩ (//20 pF)
Potential bandwidth	1 MHz
Computer interface	USB 2.0
Software	OrigaMaster

A Full Application

Compared to the **OGS080**, the **OGS100** offers a complete solution in only one instrument.

Thus, performing pH and T°C measurements is possible.
General specifications are the same than the **OGS080**: ±17.5 V for compliance voltage, ±100 mA for maximum current and ±5 V for applied voltage; but you can connect all the **OrigaLys**' products such as: **OrigaBooKst** (from 5 A to 20 A) and **OrigaMµ** (down to 1 pA with an 30 aA resolution).
OGS100 can be fitted with other external devices, as pump, heating circulator and many more.

Options

- **OrigaCell Kit**

Orange Plastic cover, lighted and removable cell, beaker holder (with adjustable height) and removable base

- **OrigaMix**

Magnetic Stirrer

- **OrigaTrod**

Rotating Disc Electrode (RDE)

- **OrigaBooKst**

Current Booster, from 5 A to 20 A

- **OrigaMµ**

Low Current Probe, down to 1 pA

- **OGF EIS**

External EIS module: up to 5 MHz

- **OrigaLine**

Static Electrode, Glass Electrodes, Tips, Sample Holder, ElectroChemical Cell, and so on.

Main Technical Specifications	
Electrode connections	2, 3 and 4
Max potential applied	±5 V
Compliance voltage	±17.5 V
Maximum current	±100 mA
Current ranges	1 nA to 100 mA in 9 decades (1 pA to 10 nA with OrigaMµ)
Potential accuracy	< 0.1 % FSR (Full Scale Range)
Potential resolution	30 nV
Current accuracy	< 0.1 % FSR
Current resolution	0.003 % FSR
Input impedance	1 TΩ (//20 pF)
Potential bandwidth	1 MHz
Computer interface	USB 2.0
Software	OrigaMaster

High power

Compared to the **OGS080**, the **OGS200** offers a complete solution in only one instrument.

Thus, performing pH and T°C measurements is possible.
General specifications are not the same than the **OGS080**: ±35 V for compliance voltage, ±2 A for maximum current and ±15 V for applied voltage. As the **OGS100** you can connect all the **OrigaLys'** products such as: **OrigaBooKst** (from 5 A to 20 A) and **OrigaMµ** (down to 1 pA with an 30 aA resolution).
OGS200 can be fitted with other external devices, as pump, heating circulator and many more.

Options

- **OrigaCell Kit**

Orange Plastic cover, lighted and removable cell, beaker holder (with adjustable height) and removable base

- **OrigaMix**

Magnetic Stirrer

- **OrigaTrod**

Rotating Disc Electrode (RDE)

- **OrigaBooKst**

Current Booster, from 5 A to 20 A

- **OrigaMµ**

Low Current Probe, down to 1 pA

- **OGF EIS**

External EIS module: up to 5 MHz

- **OrigaLine**

Static Electrode, Glass Electrodes, Tips, Sample Holder, ElectroChemical Cell, and so on.

Main Technical Specifications	
Electrode connections	2, 3 and 4
Max potential applied	±15 V
Compliance voltage	±35 V
Maximum current	±2 A
Current ranges	20 nA to 2 A in 9 decades (1 pA to 10 nA with OrigaMµ)
Potential accuracy	< 0.1 % FSR (Full Scale Range)
Potential resolution	91 nV
Current accuracy	< 0.1 % FSR
Current resolution	0.003 % FSR
Input impedance	1 TΩ (//20 pF)
Potential bandwidth	1 MHz
Computer interface	USB 2.0
Software	OrigaMaster

Detailed specifications

	OrigaStat		
Specifications overview	**OGS080**	**OGS100**	**OGS200**
Potentiostat	yes		
Galvanostat	yes		
Impedancemeter	yes		
Maximum current	±100 mA		±2 A
Compliance voltage	±17.5 V		±35 V
Max potential applied	±5 V		±15 V
Potential resolution	30 nV		91 nV
Potential accuracy	< 0.1% FSR (Full Scale Range)		
Voltage ranges	±1 V, ±2 V and ±5 V		±3 V, ±6 V and ±15 V
Maximum scan rate	200 V/s		
Current ranges	9	9 (14 with low current option)	
with standard board	1 nA to 100 mA		20 nA to 2 A
with low current option	Not available	1 pA to 10 nA	
Current accuracy	< 0.1% FSR		
Current resolution	0.003 % FSR		
Potentiostat rise/fall time	< 2 µs		
Input Impedance	> 1 TΩ (//20 pF)		> 10 GΩ (//20 pF)
Interfaces	USB 2.0		
Acquisition time	≥ 100 µs		
IR compensation Manual	No, 4 poles measurements capability		
Electrodes connections	2, 3, 4		
A/D converter	16 bits		
EIS capability	100 µHz to 1 KHz. Up to 5 MHz if connected to the OGF FRA unit		
Analog I/O	6		
External current booster	From 5 A to 20 A		
Floating option	No, versatile connectivity		
Filters	1 µs to 1 s, analog		
Dimensions (DxWxH) **Dimensions (unfolded feet)**	326 x 135 x 418 mm 326 x 247 x 418 mm		400 x 135 x 418 mm 400 x 247 x 418 mm
Power requirements	90-264 Vac, 47-63 Hz, 30 VA		90-264 Vac, 47-63 Hz, 120 VA
Weight (chassis + pstats)	5.5 kg		8 kg
Software	OrigaMaster (by USB 2.0)		
Cell cable length	On demand		
Temperature control	Not available	-10°C to 105°C	

Subject to change without notice

MORE INFORMATIONS ON

www.origalys.com and facebook

Powerful

The **OrigaBooKst** increases the maximum current of the following instruments:

- **OrigaStat: OGS100** and **OGS200**
- **LandStat**

The maximum current can be increased by easily adding module of 5 A. Thus, 4 ranges are available:

5 A, 10 A, 15 A and 20 A.

How it works

The Booster consists in connecting **1 Drive Unit** and **Power Units of 5 A to an OrigaLys' potentiostat**

The **Drive Unit** replaces the front panel of the **OrigaLys'** Potentiostat. Thus, you connect the electrodes to the **Drive Unit** and not any more to the potentiostat.

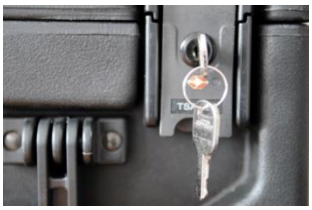
Main Technical Specifications	
Electrode connections	2, 3 and 4
Max potential applied	±15 V
Compliance voltage	±20 V
Maximum current	±5 A / ±10 A ±15 A / ±20 A
Resolution	0.003%
Accuracy	< 0.1 % FSR (Full Scale Range)
Operation mode	Potentiostat/ Galvanostat
Bandwidth - **Potentiostatic** - **Galvanostatic**	50 KHz
Software	OrigaMaster
Instrument compatibility	OGS100 OGS200 LandStat OGFEIS

Potentiostat for the field

This Potentiostat, Galvanostat, Impedancemeter from **OrigaLys Electrochem SAS** was specially designed for outside measurements:

- Complete solution: Potentiostat, Galvanostat, Impedancemeter (100 µHz - 5 MHz), RDE Speed Controller and PC Software (**OrigaMaster**)
- A laptop can be integrated into the box.
- Easily transportable due to its luggage cabin size and its wheels

- Safe thanks to the key lock system



Main Technical Specifications	
Electrode connections	2, 3 and 4
Max potential applied	±5 V
Compliance voltage	±17.5 V
Maximum current	±100 mA
Current ranges	1 nA to 100 mA in 9 decades
Potential accuracy	< 0.1 % FSR (Full Scale Range)
Potential resolution	30 nV
Current accuracy	< 0.1 % FSR
Current resolution	0.003 % FSR
Input impedance	1 TΩ (//20 pF)
Potential bandwidth	1 MHz
Computer interface	USB 2.0
Software	OrigaMaster

Options

- **OrigaMix**
Magnetic Stirrer
- **OrigaTrod**
Rotating Disc Electrode (RDE)
- **OrigaBooKst**
Current Booster
- **OrigaLine**
Static Electrodes, Glass Electrodes, Tips, Sample Holder, ElectroChemical Cell, and so on.

1 instrument

Many applications

- Corrosion & Cathodic Protection Survey
- Pipes & Tank: Gas, Oil and Water
- Navy Industry: Reinforced Concrete Structure
- Coating & Plating
- And many more

5 possibilities

1 Channel		2 Channels		
Built-in EIS 100 µHz - 5 MHz	**Limited EIS** 100 µHz - 1 KHz	**Built-in EIS** 100 µHz - 5 MHz		**Limited EIS** 100 µHz - 1 KHz
		On one Channel	On each Channels	

Rotating Disc Electrode (RDE)

The Kit is composed by

OrigaTrod

Rotating Disc Electrode (RDE).
From 100 to 10,000 rpm

OrigaTrod fits on most glass cells, with an NS 14/23 ground joints.
Manufactured with noble plastics PETP, PTFE, PEEK and the best stainless steel.

A metallic and removable barbed fitting allows a neutral gas to flow through the electrode when it used in a corrosive atmosphere.
The electrical signal is ensured thanks to graphite contact doped with silver.
With an optical digital encoder, **OrigaTrod** guarantees a rotation speed accuracy of 0.35%.

OrigaBox

Rotating Disc Electrode Speed Controller.

OrigaBox is really a tiny piece of high technology using an ARM9 processor. Thus, we are able to obtain a 0.35 % digital regulation of the Rotating Electrode Speed (and without risk of runaway).
OrigaBox offers a unique flexibility.

Delivered with its PC Software, connected by USB, **OrigaBox** drives the **OrigaTrod**. But, it can also adapt itself to the environment. With a specific cord, **OrigaBox** can receive an anolog signal from any kind of Potentiostat (from **OrigaLys** or not).

Product compatibility	
OrigaTrod (without OrigaBox)	OGS080, OGS100, OGS200, LandStat
OrigaTrod and OrigaBox	OGF500, OGF01A, OGF05A

A complete solution

RDE Stand

This stand for RDE is composed by:
- A standard stand
With a robust base
The height is easily adjustable

- A glass cell
The volume can vary, on demand.
This cell can also be thermostated.
With its 5 holes, the cell can fit RDE, counter electrodes, working electrodes and reference electrodes made by OrigaLys or not.

OrigaTrod Kit

When the OrigaTrod is used together with the OrigaBox, it is provided with a box. Thus, everything is safely transported.

This kit contains:
- OrigaTrod
- OrigaBox
- Stainless Steel Holder
- USB Key, containing the software (PC Control Panel)
- User's manual
- The convenient cords
- The box

Not delivered with tips, pellets or sample holders. But, it has been designed to carry it, easily.

The most accurate device

The **OrigaMµ** allows to perform very low current measurement of the following instruments:

- **OrigaStat: OGS100** and **OGS200**
- **LandStat**
- **OrigaFlex: OGF500, OGF01A** and **OGF05A**

The maximum current can be decreased to:
1 pA, 10 pA, 100 pA, 1 nA and 10 nA.

How it works

This low current probe can be used alone (manual mode) or connected (remote mode) to an **OrigaLys**' instrument.

Remote Mode

Connecting the **OrigaMµ** to an **OrigaLys**' potentiostat allows to fully operate the excellent response time of the **OrigaMµ.**
Driven by purely analog signal and supplied on battery during measurements (no risk of interference), you can implement using **OrigaMaster** all standard electrochemical methods including impedance up to 1 KHz.

Manual Mode

The **OrigaMµ** can be used alone, thus it applies a constant potential (from ±1 V).
Here, the current ranges are:
100 pA, 1 nA and 10 nA.

Main Technical Specifications	
Electrode connections	2 or 3
Max potential applied	±2 V (Remote mode) ±1 V (manual mode)
Compliance voltage	±7 V
Current ranges	5: ±1 pA, ±10 pA, ±100 pA , ±1 nA , and ±10 nA
Best resolution	30 aA
Accuracy	< 0.1 % FSR (Full Scale Range)
Operation mode	Connected or alone
Software	OrigaMaster if connected None if alone
Instrument compatibility	OGS100 OGS200 LandStat OGF500 OGF01A OGF05A

The OrigaFlex range

The **OrigaFlex** is a combining system of different power channels (500 mA, 1 A and 5 A). It is an independent ”module” solution.
Each module is a real **Potentiostat** and **Galvanostat**. Moreover, measuring the temperature is possible.
A **Drive Unit** is necessary to control the channels. 20A and/or 10 Channels per drive unit is the only limit. The EIS module does not count as a Channel, so you can connect up to 10 EIS modules on 10 Channels. So, by multiplying drive units, the system becomes without limits.
The base allows a big reliability since it includes a **Dummy Cell** facilitating tests before experiments. It is also an excellent way to control cords and the instrument.

OGF500
±500 mA / ±20 V

OGF01A
±1 A / ±20 V

For example, you can build this system:

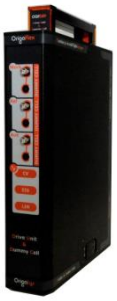
An **OrigaFlex** system with:
- 1 x **Drive Unit and Dummy Cell**
- 5 x **OGF500**
- 1 x **OGFEIS**

OGF05A
±5 A / ±20 V

OGFEIS
100 µHz – 5 MHz

How it works

To supply the system, there are two possibilities, depending on the needs...



Use the **Drive Unit**, if you need more than one Channel

Use the **Power Supply**, if you need just one Channel to begin

Drive Unit & Dummy Cell

3 main functions:

1. It **supplies current in channels**, as the sum of each amps channel connected to a Drive Unit shall not exceed **20A**.
2. It allows **connection to a computer via Ethernet**. Thus, the PC software included, called **OrigaViewer** (without charge or licence) can control each channel of the system. Individually, each channel can be controlled by the PC software **OrigaMaster** via USB.
3. Finally, thanks to its **dummy cell**, functional tests can be performed on cords and on the different Channels. Thus, it is ensured that each method will be perfectly performed.

For example:

Five 500 mA Channels
+
One EIS Channel

Power Supply - OGFPWR

2 main functions:

1. **It supplies current to only one channel (500 mA, 1 A or 5 A).**
2. **It also supplies current to an EIS module.**

It is **not connected to a PC**. The connection has to be made **from the Channel** (**via USB** from the rear panel). Here, the channel is controlled by **OrigaMaster**.
No Dummy Cell inside

Technical specifications:

Power: 100-240Vac – 50-60Hz – 1KVA
Weight: 3.10 kg
Dimensions (Length x Width x Height) :
28.5 x 8.3 x 24.15 cm

For example:

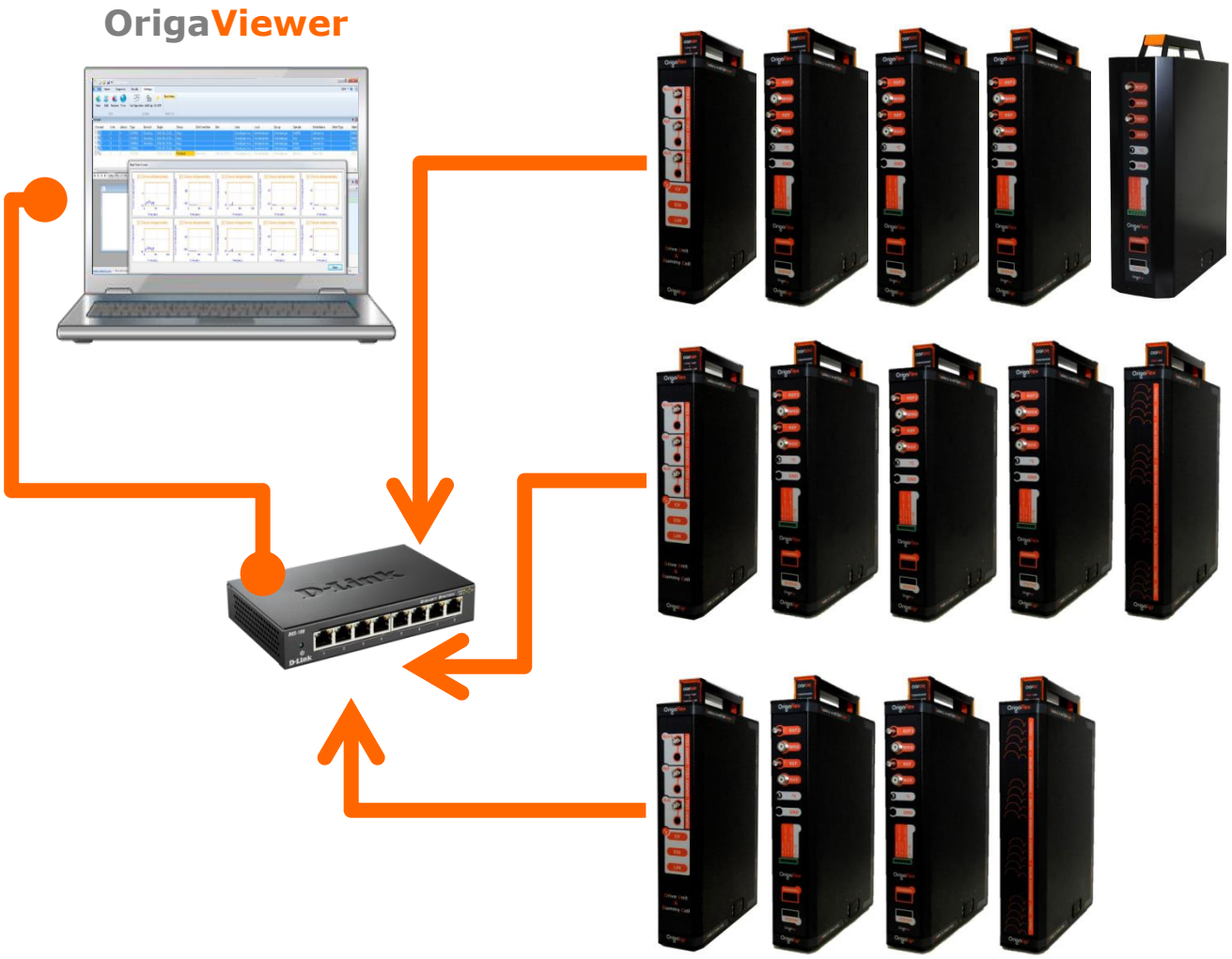
One 500 mA Channel
+
One EIS Channel

or

One 500 mA Channel

How it works

Thanks to a networking system, the possibilities are without limits...



Example:

- ✓ **3** x Drive Unit & Dummy Cell
- ✓ **5** x 500mA Channel
- ✓ **3** x 1A Channel
- ✓ **1** x 5A Channel
- ✓ **2** x EIS module
- ✓ **1** x Network Switch
- ✓ **1** x Laptop
- ✓ **1** x OrigaViewer Software

OGF500

This Potentiostat, Galvanostat, from **OrigaLys Electrochem SAS** was specially designed as independent module:

- In the case Channels are added, simultaneous measurements on different Channels can be synchronized.
- EIS measurement is optional. To proceed, an EIS module (**OGFEIS**) has to be connected.
- This individual Channel can be addressed directly to a PC, via USB and so controlled by **OrigaMaster**.
- 2 screens available: one to see the potential and one to see the Channel numbering.
- Up to 10 Channels **OGF500** with 1 **Drive Unit & Dummy Cell**

Options

- **OGF EIS**

External EIS module: 100µHz-5MHz

- **OrigaTrod Kit**

Rotating Disc Electrode (RDE) and its Speed Controller (**OrigaBox**)

- **OrigaMµ**

Low Current Probe, down to 1 pA

- **OrigaMix**

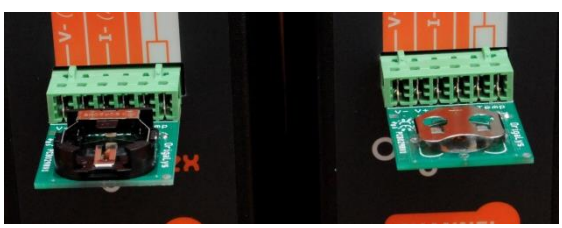
Magnetic Stirrer and its Speed Controller (**OrigaBox**)

- **OrigaLine**

Static Electrodes, Glass Electrodes, Tips, Sample Holder, ElectroChemical Cell, and so on.

- **Battery Cell Holder**

See pictures below



Main Technical Specifications	
Electrode connections	2, 3 and 4
Max potential applied	±15 V
Compliance voltage	±20 V
Maximum current	±500 mA
Current ranges	5 nA to 500 mA in 9 decades
Potential accuracy	< 0.1 % FSR (Full Scale Range)
Potential resolution	450 µV on ±15 V
Current accuracy	< 0.1 % FSR
Current resolution	0.003 % FSR
Input impedance	10 GΩ (//20 pF)
Potential bandwidth	1 MHz
Computer interface	Ethernet or USB 2.0
Software	OrigaViewer or OrigaMaster

This Potentiostat, Galvanostat, from **OrigaLys Electrochem SAS** was specially designed as independent module:

- In the case Channels are added, simultaneous measurements on different Channels can be synchronized.
- EIS measurement is optional. To proceed, an EIS module (**OGFEIS**) has to be connected.
- This individual Channel can be addressed directly to a PC, via USB and so controlled by **OrigaMaster**.
- 2 screens available: one to see the potential and one to see the Channel numbering.
- Up to 10 Channels **OGF01A** with 1 **Drive Unit & Dummy Cell**

Options

- **OGF EIS**

External EIS module: 100µHz-5MHz

- **OrigaTrod Kit**

Rotating Disc Electrode (RDE) and its Speed Controller (**OrigaBox**)

- **OrigaMµ**

Low Current Probe, down to 1 pA

- **OrigaMix**

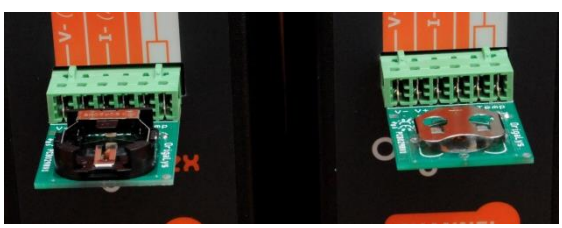
Magnetic Stirrer and its Speed Controller (**OrigaBox**)

- **OrigaLine**

Static Electrodes, Glass Electrodes, Tips, Sample Holder, ElectroChemical Cell, and so on.

- **Battery Cell Holder**

See pictures below



Main Technical Specifications	
Electrode connections	2, 3 and 4
Max potential applied	±15 V
Compliance voltage	±20 V
Maximum current	±1 A
Current ranges	10 nA to 1 A in 9 decades
Potential accuracy	< 0.1 % FSR (Full Scale Range)
Potential resolution	450 µV on ±15 V
Current accuracy	< 0.1 % FSR
Current resolution	0.003 % FSR
Input impedance	10 GΩ (//20 pF)
Potential bandwidth	1 MHz
Computer interface	Ethernet or USB 2.0
Software	OrigaViewer or OrigaMaster

OGF05A

This Potentiostat, Galvanostat, from **OrigaLys Electrochem SAS** was specially designed as independent module:

- In the case Channels are added, simultaneous measurements on different Channels can be synchronized.
- EIS measurement is optional. To proceed, an EIS module (**OGFEIS**) has to be connected.
- This individual Channel can be addressed directly to a PC, via USB and so controlled by **OrigaMaster**.
- 2 screens available: one to see the potential and one to see the Channel numbering.
- Up to 4 Channels **OGF05A** with 1 **Drive Unit & Dummy Cell**

Options

- **OGF EIS**

External EIS module: 100µHz-5MHz

- **OrigaTrod Kit**

Rotating Disc Electrode (RDE) and its Speed Controller (**OrigaBox**)

- **OrigaMµ**

Low Current Probe, down to 1 pA

- **OrigaMix**

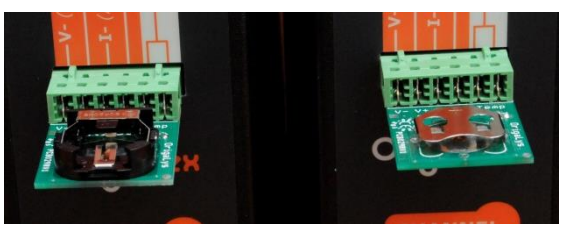
Magnetic Stirrer and its Speed Controller (**OrigaBox**)

- **OrigaLine**

Static Electrodes, Glass Electrodes, Tips, Sample Holder, ElectroChemical Cell, and so on.

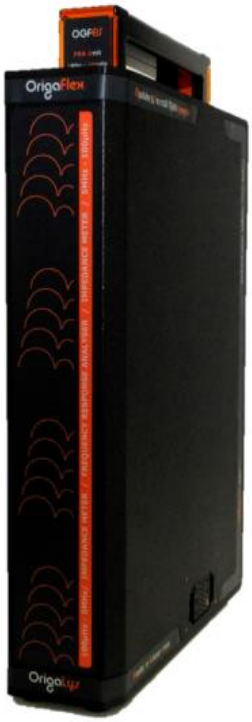
- **Battery Cell Holder**

See pictures below



Main Technical Specifications	
Electrode connections	2, 3 and 4
Max potential applied	±15 V
Compliance voltage	±20 V
Maximum current	±5 A
Current ranges	50 µA to 5 A in 6 decades
Potential accuracy	< 0.1 % FSR (Full Scale Range)
Potential resolution	450 µV on ±15 V
Current accuracy	< 0.1 % FSR
Current resolution	0.003 % FSR
Input impedance	10 GΩ (//20 pF)
Potential bandwidth	100 KHz
Computer interface	Ethernet or USB 2.0
Software	OrigaViewer or OrigaMaster

High Electrochemical Impedance Spectroscopy (EIS)



Performing EIS measurements becomes easier with this additional module dedicated to Impedance.

- Once the module is added to a any kind of Channel, the **OrigaMaster** software allows a potentiostatic and galvanostatic control, over a frequency of:
  100 µHz to 5 MHz
- Included into **OrigaMaster**, you can find all the EIS methods:
  - Potential Dynamic EIS
  - Potential Fixed Frequency (Capacitance)
  - Galvanic Dynamic EIS

Compatibility

- **OGF500**
- **OGF01A**
- **OGF05A**
- **OGS100**
- **OGS200**
- **LandStat**

OGFEIS connected to an **OGS200**

OGFEIS connected to an **OGS100**

Main Technical Specifications	
Frequency range	100 µHz – 5 MHz
Frequency resolution	5 ppm
Input range	±15 V
Signal types	Sine with delay and Average on 1 to 10 determinations
Input Channels	E and I from the Potentiostat/galvanostat or X and Y external signals
Potential AC Amplitude	One or the other: - 1 mV to 300 mV
Current AC Amplitude	0,002% to 23,5% of range I
Data	Nyquist, Bode, Admittance
Analysis	Fit and simulation, Find circle, Element subtraction, Export Data
Software	OrigaMaster and OrigaViewer

Detailed specifications

	OrigaFlex		
General specifications	**OGF500**	**OGF01A**	**OGF05A**
Potentiostat	yes		
Galvanostat	yes		
Maximum current	±500 mA	±1 A	±5 A
Compliance voltage	±20 V		
Max potential applied	±15 V		
Potential resolution	450 µV on ±15 V		
Potential accuracy	< 0.1% FSR (full scale range)		
Voltage range	±15 V		
Maximum scan rate	200 V/s		
Current ranges	9 (14 in low current)		6 (11 in low current)
standard	5 nA à 500 mA	10 nA to 1A	50 µA à 5A
with low current option	1 pA to 10 nA		
Current accuracy	< 0.1% FSR		
Current resolution	0.003 % FSR		
Potentiostat rise/fall time	< 4 µs		
Input impedance	10 GΩ (//20 pF)		
Interfaces	Ethernet, USB 2.0		
Acquisition time	≥100 µs		
IR Compensation Manual	No, 4 pole measurement capability		
Electrode connections	2, 3, 4		
A/D converter	16 bits		
EIS Capability	100 µHz to 5 MHz		
Analog I/O	7		
External Booster of current	5 A to 20 A		
Floating option	No versatile connection		
Filters	1 µs to 1 s, analog		
Dimensions (DxWxH)	300 x 85 x 450 mm		300 x 120 x 450 mm
Power requirements	88-264 Vac, 47-63 Hz, 30 VA	88-264 Vac, 47-63 Hz, 40 VA	115/230 Vac, 47-63 Hz, 150 VA
Weight (framework + pstats)	4.55 kg	4.55 kg	10.3 kg
Software	OrigaMaster (by USB 2.0), OrigaViewer (by Ethernet)		
Cable length	On demand		
Temperature control	-10°C à 105°C		

Subject to change without notice

MORE INFORMATIONS ON

www.origalys.com and facebook

Battery Testing System

With the OrigaCycler, build your own system according your needs

- Flexible
- Powerful
- Combinable
- Independent channels
- Industry accuracy
- Potentiostat/Glavanostat functionnality
- Up to 999 Channels

This **OrigaLys** Multi-Channel Battery Testing System has been specially designed for Batteries. The **OrigaCycler** manages to offer flexible and high level specifications in a Tunkey system. According to the core value of **OrigaLys**, **OrigaCycler** provides either a standardized or a custom designed testing solution to fit your needs.
It's a true Potentiostat - Galvanostat, which provides both voltage and current control for all charging and discharging requirements. As the **OrigaFlex** system, it is a system of independent module, called OGC.

OrigaCycler's capability	
Number of Channels	Up to 10 Channels per Chassis
Circuity	Linear Bipolar
Voltage range	±15 V
Current ranges	500 mA, 1 A, 5A and 10 A

Features

Independent Channels
Users can run, simultaneously, multiple independent tests

Missing Link
The **OrigaCycler** has been designed for both Research and Industry

True Potentiostat/Galvanostat
Both voltage and current can be controlled with the software methods

Real flexible system
Each channels (500 mA, 1 A, 5 A or 10 A) are combinable into one chassis

Quick connection capability
Every electrode connections are duplicated on a unique connector, allowing, among other, a quick connection of Battery holder with integrated temperature sensor or dedicated cables

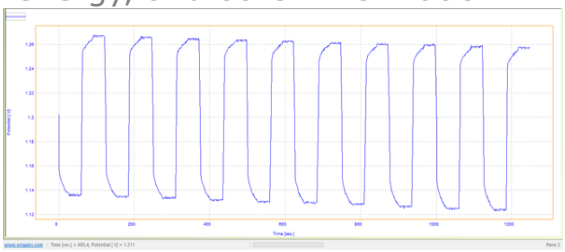
Perfectly transportable
With its robust wheels, the Cycler can be easily moved

Software free of charge
As all the OrigaLys' products, the software comes with the instrument for free and without licence

Many methods available
Charge/Discharge
Constant Power
Run Profile
Internal Resistance
And more on demand

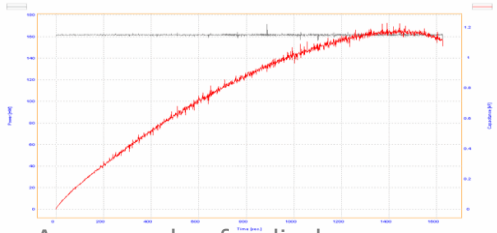
Application

Life Cycle Testing
Each Channel can perform charge and discharge cycling of various cells or batteries to get charge and discharge capacity, energy, and other information



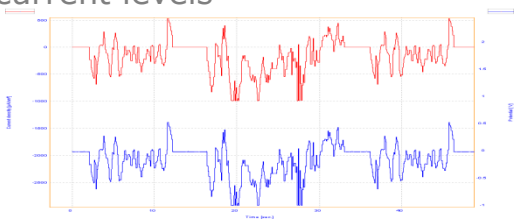
An example of cycles on a Lithium-Ion battery (3,7 V-8,14 Wh - 2200 mA/h)

Constant Power
Performing a charge or a discharge whereas the power (in mW) of the battery is maintained and so constant.



An example of a discharge on a Lithium-Ion battery with a 160mW constant power

Run Profile
According a specific profile from the user, the method imposes current levels



Internal Resistance
It calculates the battery internal resistance in order to get the quality level

The OrigaCycler range

The **OrigaCycler** is a combining system of different power channels (500 mA, 1 A, 5 A and 10 A). It is an independent ”module” solution.
Each module is a real Potentiostat and Galvanostat. Moreover, measuring the temperature is possible.
Each Channel can be controlled, individualy via USB, with **OrigaMaster**.
All the Channels or a limited number, according your needs, can be controlled, via Ethernet, with **OrigaViewer**.
A **Drive Unit** is necessary to control the channels.

OGC01A
±1 A / ±20 V

USB 2.0

Drive Unit

ETHERNET

Options

- **OrigaMμ**

Low Current Probe, down to 1 pA

- **OrigaMix**

Magnetic Stirrer and its Speed Controller (**OrigaBox**)

- **OrigaLine**

Static Electrodes, Glass Electrodes, Tips, Sample Holder, ElectroChemical Cell, and so on.

- **Battery Cell Holders and dedicated connectors**

See pictures below

Detailed specifications

	OrigaCycler			
Specifications overview	**OGC500**	**OGC01A**	**OGC05A**	**OGC10A**
Potentiostat	Yes			
Galvanostat	Yes			
Maximum current	±500 mA	±1 A	±5 A	±10 A
Compliance voltage	±20 V			
Max potential applied	±15 V			
Potential resolution	450 µV on ±15 V			
Potential accuracy	< 0.1% FSR (Full Scare Range)			
Voltage range	±15 V			
Maximum scan rate	200 V/s			
Current ranges	9 (14 with LC)		6 (11 with LC)	
with standard board	5 nA to 500 mA	10 nA to 1A	50 µA to 5A	100 µA to 10 A
with low current option	1 pA to 10 nA			
Current accuracy	< 0.1% FSR			
Current resolution	0.003 % FSR			
Potentiostat rise/fall time	< 4 µs			
Interfaces	Ethernet, USB 2.0			
Acquisition time	≥100 µs			
IR compensation Manual	No, 4 pole measurements capability			
Electrodes connections	2, 3, 4			
A/D converter	16 bits			
Analog I/O	7			
Floating option	No, versatile connectivity			
Filters	1 µs to 1 s, analog			
Dimensions (DxWxH)	29 x 12 x 37.5 cm			29 x 24 x 37.5 cm
Power requirements	88-264 Vac, 47-63 Hz, 30 VA	88-264 Vac, 47-63 Hz, 40 VA	115/230 Vac, 47-63 Hz, 150 VA	
Software package	OrigaMaster (by USB 2.0), OrigaViewer (by Ethernet)			
Cell cable length (std)	On demand			
Cell cable length options				
Temperature control	Probe input (-10°C to 105°C)			

Subject to change without notice

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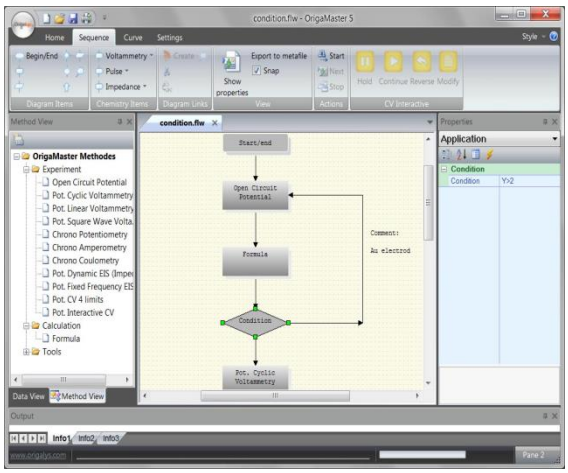
OrigaLys provides 3 different software, depending on the use

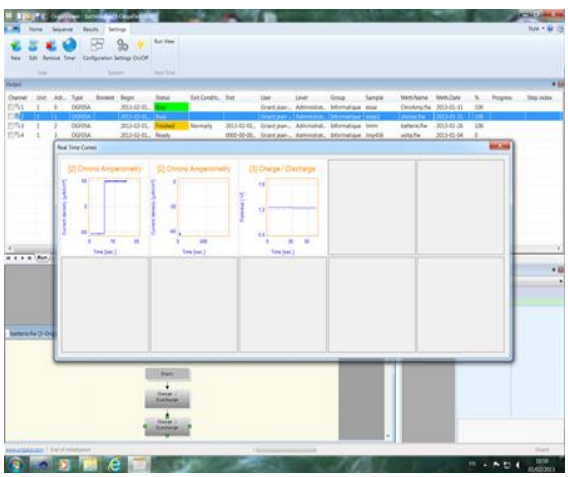


OrigaMaster

Dedicated to mono-potentiostat. Windows interface. Compatible with Windows XP, Vista, 7 and 8.

Products' compatibility

OrigaStat: OGS080, OGS100 and OGS200 LandStat
OrigaFlex: OGF500, OGF01A and OGF05A
OrigaCycler: OGC500, OGC01A, OGC05A and OGC10A

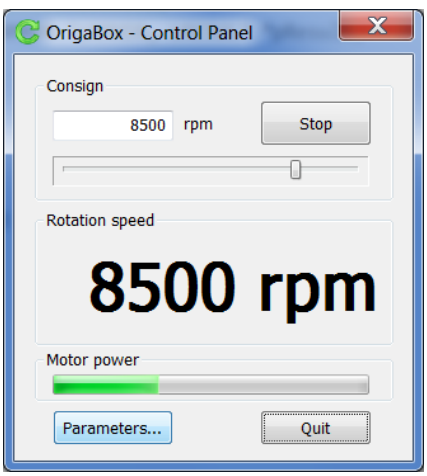


OrigaViewer

Dedicated to multi-potentiostat. Windows interface. Compatible with Windows Vista, 7 and 8.

Products' compatibility

OrigaFlex: OGF500, OGF01A and OGF05A
OrigaCycler: OGC500, OGC01A, OGC05A and OGC10A



PC Control Panel

Allows to control the Speed Controller of the RDE and Magnetic Stirrer. Windows interface. Compatible with Windows XP, Vista, 7 and 8.

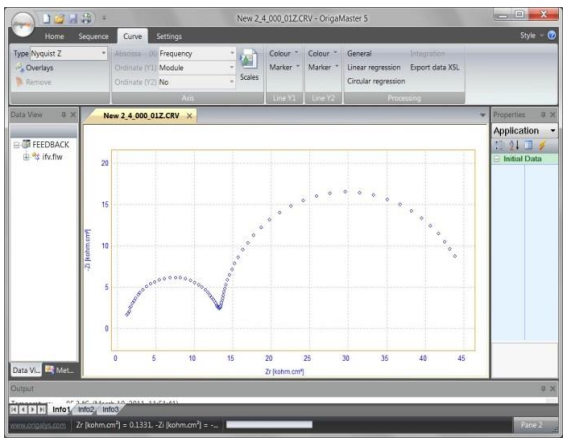
Products' compatibility

OrigaBox: RDE (OrigaTrod) and Magnetic Stirrer (OrigaMix) Speed Controller

Easy to use and scalable

With **OrigaMaster**, you never lose or miss a single record. Indeed, the system always asks you if you want to save the data and so the results.

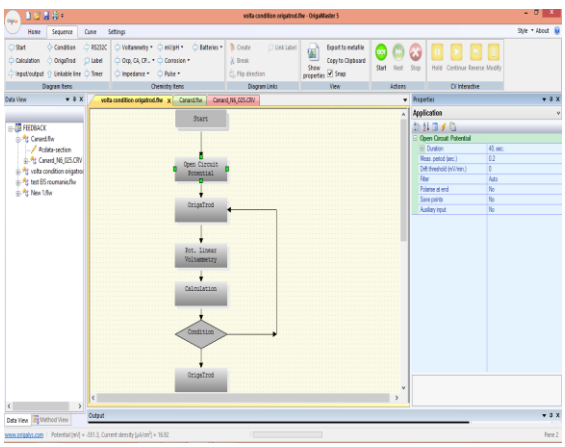
If asking by the user**, OrigaMaster** automatically records all data obtained on unit interfaced via a standard USB port, with naming according user choice.



With **OrigaMaster**, you never lose or miss a single record thanks to automatic uploading and archiving of all results and curve data points obtained from your connected electrochemical unit.

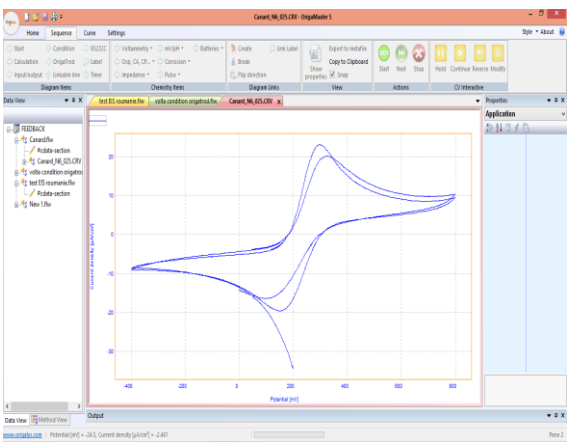
In addition to the usual methods it also features:

- graphic programming of the sequences
- the possibility of running conditional loops, cycles tests
- Insertion of a mathematical equation, of starting a peripheral, and receiving start/stop commands from external units.



OrigaMaster and its start/stop instructions combined to the logical inputs of the **OrigaLys**' instruments, provides a complete automation for electrochemical applications.

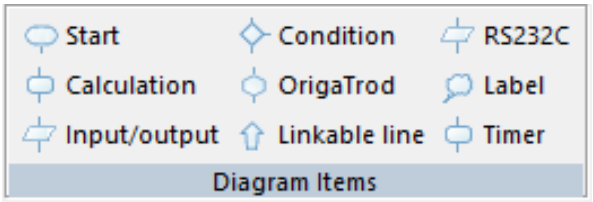
OrigaMaster includes an help file, accessible at all times. A printable version is also available.



The standard tools available on OrigaMaster and OrigaViewer

Diagram items

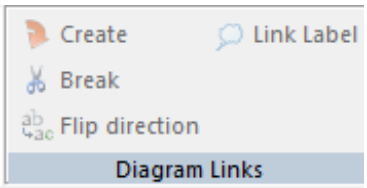
- Start
- Calculation
- Condition
- Label
- Timer
- Linkable line
- OrigaTrod: *to control the Rotating Disc Electrode (RDE)**
- RS232C commands: *(Not available with OrigaStat-OGS080)**
- TTL Input/Output: *(Not available with OrigaStat-OGS080)**



** Not available with the OrigaFlex and OrigaCycler*

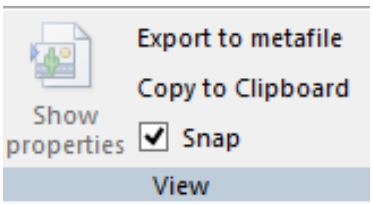
Diagram Links

- Create *a link between 2 methods*
- Break a *link between 2 methods*
- Flip direction: *it changes the link direction*
- Link Label: *it puts a title near the link*



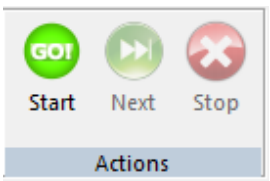
View

- Export to metafile
- Copy to clipboard: *copy the flow chart as a picture*
- Snap/Grid
- Show properties



Actions

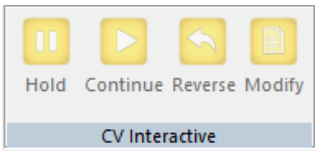
- Start: *run a sequence*
- Next: *go to the next method*
- Stop: *end a sequence*

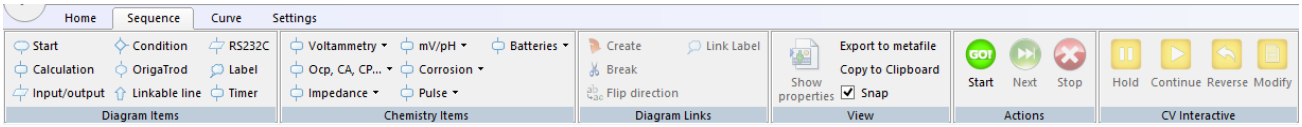


CV Interactive*

- Hold: *stop temporarily the method*
- Continue: *start again the method*
- Reverse: *come back to the last method*
- Modify: *change the initial parameters*

* *Only available with " Pot. Interactive CV "*

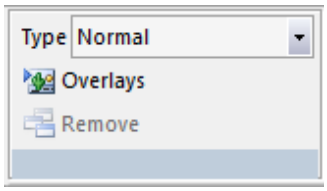




All the standard tools to process a curve

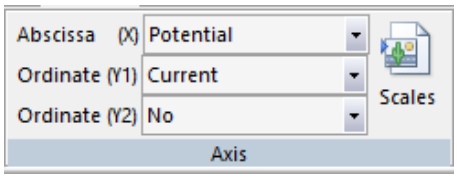
Type

- Type. *For example: Bode, Nyquist*
- Overlays *many curves*
- Remove



Axis

- Abscissa (X)
- Ordinate (Y1)
- Ordinate (Y2)
- Scales



Line Y1

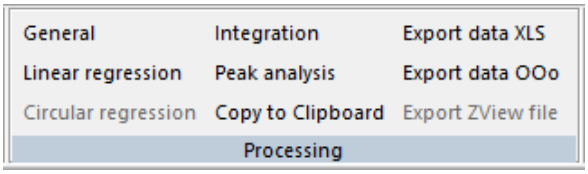
- Colour
- Marker
- Graph

Line Y2

- Colour
- Marker

Processing

- General
- Linear regression
- Circular regression
- Integration
- Peak analysis
- Copy to clipboard: *copy the flow chart as a picture*
- Export data XLS *(Excel)*
- Export data Ooo *(Open Office)*
- Export Zview file (*for analysis of impedance equivalent circuit*)

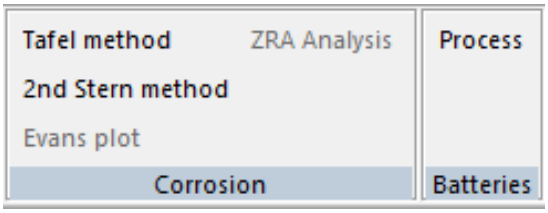


Corrosion

- Tafel Method
- 2nd Stern Method
- Evans plot
- ZRA Analysis

Batteries

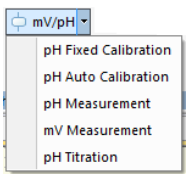
- Process

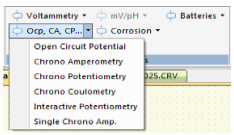


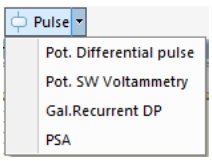
Methods

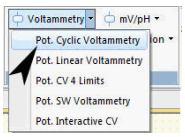
Specifications overview	OrigaMaster			
	LandStat	OrigaStat	OrigaFlex	OrigaCycler
VOLTAMMETRY				
Pot. Cyclic Voltammetry			✓	
Pot. Linear Voltammetry			✓	
Pot. CV 4 limits			✓	
Pot. Interactive CV			✓	
CHRONO				
Open Circuit Potential			✓	
Chrono Amperometry			✓	
Chrono Coulometry			✓	
Chrono Potentiometry			✓	
Interactive Potentiometry			✓	
Single Chrono Amperometry			✓	
IMPEDANCE				
Pot. Dynamic EIS		✓		×
Pot. Fixed Frequency EIS (Capacitance)		✓		×
Gal. Dynamic EIS		✓		×
CORROSION				
Pitting corrosion			✓	
General corrosion (Rp)			✓	
Coupled corrosion (Evans)			✓	
Polarisation for corrosion (Tafel)			✓	
Zero Resistance Ammeter (ZRA)	✓	✓*	×	
PULSE				
Pot. Differential Pulse			✓	
Gal. Recurrent Differential Pulse			✓	
Pot. SW Voltammetry			✓	
PSA	✓	✓*	×	
BATTERIES				
Charge/Discharge			✓	
Constant Power			✓	
Run Profile			✓	
Internal Resistance			✓	
pH AND mV MEASUREMENT				
pH fixed Calibration	✓	✓*	×	
pH auto Calibration	✓	✓*	×	
pH measurement	✓	✓*	×	
mV measurement	✓	✓*	×	

*** Not available with OrigaStat - OGS080**









Powerful and Secure

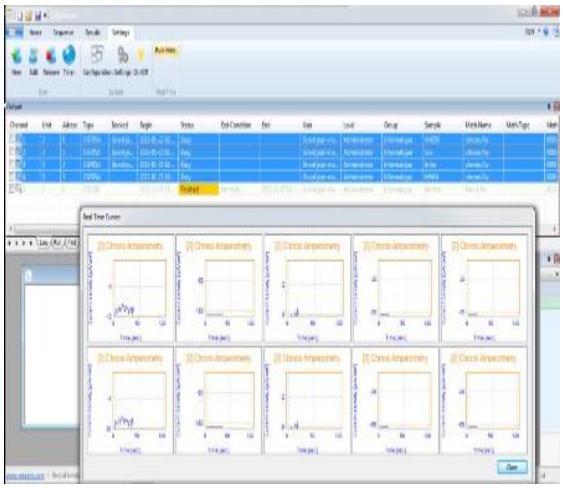
OrigaViewer uses a powerful database secure system, via Ethernet.
There are 3 levels of users:
- Administrator
- Supervisor: head of one group
- Operator: controlled by the supervisor

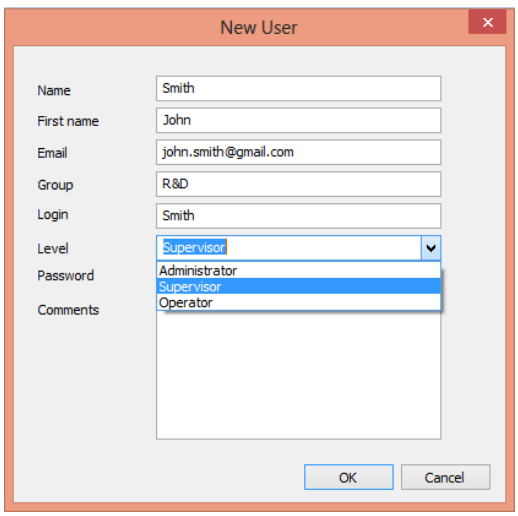
It is a software for Multi-Channels. A screen allows the on-line view of the simultaneous measurements.
Thanks to the database, all the results are saved automatically and much more: name of the user, his group, date, method, sample, exit condition and so on.

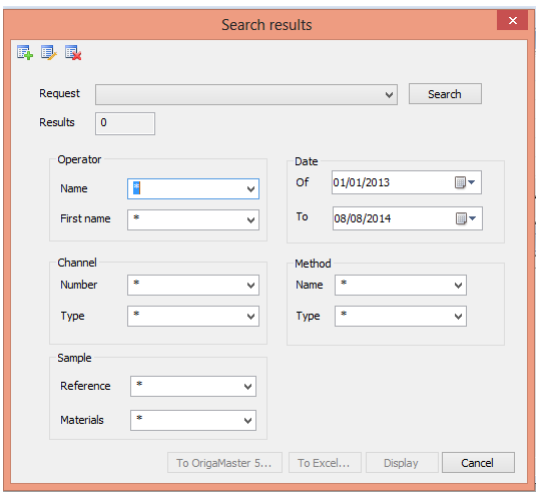
OrigaViewer is compatible with **OrigaMaster**. Thus, you can prepare a sequence (flow chart) with **OrigaMaster** and load it into **OrigaViewer**. A curve obtained by **OrigaViewer** can be processed into **OrigaMaster**.

OrigaViewer is also a scalable system. It can be personalized to fit your needs. Methods can be removed or added, on demand.

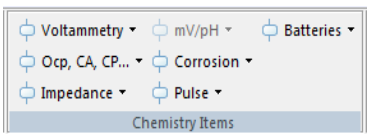
OrigaViewer is a powerful data archiving tool, which enables you to access your stored results and curves in a flash via user-programmable requests. You can consult the dedicated analytical database and filter and sort the archived results by date, method type etc. providing the information you need at a glance.

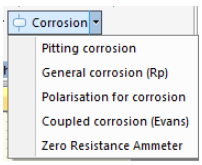


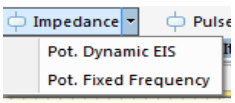


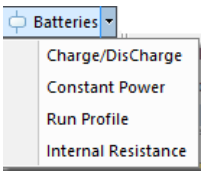


Specifications overview	OrigaViewer						
	OrigaFlex			OrigaCycler			
	OGF500	OGF01A	OGF05A	OGC500	OGC01A	OGC05A	OGC10A
VOLTAMMETRY							
Pot. Cyclic Voltammetry	✓						
Pot. Linear Voltammetry	✓						
Pot. CV 4 limits	✓						
Pot. Interactive CV	×						
CHRONO							
Open Circuit Potential	✓						
Chrono Amperometry	✓						
Chrono Coulometry	✓						
Chrono Potentiometry	✓						
Interactive Potentiometry	×						
Single Chrono Amperometry	✓						
IMPEDANCE							
Pot. Dynamic EIS	✓			×			
Pot. Fixed Frequency EIS (Capacitance)	✓			×			
Gal. Dynamic EIS	✓			×			
CORROSION							
Pitting corrosion	✓						
General corrosion (Rp)	✓						
Coupled corrosion (Evans)	✓						
Polarisation for corrosion (Tafel)	✓						
Zero Resistance Ammeter (ZRA)	×						
PULSE							
Pot. Differential Pulse	✓						
Gal. Recurrent Differential Pulse	✓						
Pot. SW Voltammetry	✓						
PSA	×						
BATTERIES							
Charge/Discharge	✓						
Constant Power	✓						
Run Profile	✓						
Internal Resistance	✓						
pH AND mV MEASUREMENT							
pH fixed Calibration	×						
pH auto Calibration	×						
pH measurement	×						
mV measurement	×						









Accessories

35 ORIGASENS

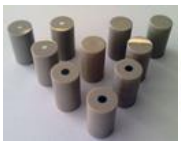
OrigaLys provides any kind of Reference, Auxiliary, Working, Selective and Counter Electrodes: Calomel, Ag/AgCl, Platinum, Silver, Glassy Carbon, Combined, Fluor, Calcium and Nitrate.

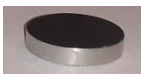
Many more on demand

35 ORIGACCESS

With the electrodes, we offer any kind of connectors (BNC, UHF and so on), length and shilded cords or not.

36 ORIGATIP





Tips:
- Platinum, Gold, Glassy Carbon

Pellets:
- Aluminum, BDD, Copper, etc.

Sample Holder:
- Active area: ø6 or 13mm
- Pellets: ø8 or 15m

37 STATROD

Static Electrode
Banana connector
PEEK material

38 ORIGACELL

OrigaLys supplies cells with:
- **Potentiostats**: OrigaCell Kit for OrigaStat
- **Electrodes**: any kind of Glass or Plastic beakers
- **Specific applications**: Corrosion Cells, thermostated Cells

39 STAND

The cell stand was specially designed to support cell and a Rotating Disc Electrode (OrigaTrod)

39 BATTERY HOLDERS

2 different holders, both includes temperature control

For:
- **Coin Cells**
- **Flat Cells**
- **Cylindrical Cells**

39 ORIGAMIX

Magnetic Stirrer
Exchangeable
From 100
to
1,500 rpm

OrigaSens - Electrode

OrigaLys provides a wide range of electrodes:
- Reference
- Counter electrodes
- Combines
- Selective
- pH
- And many more on demand.

Standard specifications
- Length:103 or 120 mm
- Diameter: 6, 8, 10 or 12 mm
- Grinded or not
- Screw head
- Porous Pin

Electrode Overview	
Reference	Hg/HgO, Ag/AgCl and Calomel
Auxiliary and Working	Silver rod ø3mm, Glassy Carbon rod ø3mm, Platinum disc ø10mm, Platinum wire ø1mm and Platinum plate 5x5mm
Combined	Silver rod ø3mm + Hg/Hg2SO4, Platinum ring ø8x1,5 + Ag/AgCl
Selective	Fluor, Nitrate and Calcium
pH	Annular Junction, ø12x103mm
Other	Liquid Junction Protection Tube ø12: 140 mm, porous pin, NS14/23 ground joint

Ag/AgCl Reference Electrode
Porous Pin, Saturated KCL, 103 mm

Origaccess - Cords

With its electrodes, **OrigaLys** provides a wide range of cords and connectors. The standard one for our electrodes is CLSCH S7/S8.

All the cords offered with OrigaLys' potentiostat are shielded to obtain better results.

Cord Overview	
Connectors	BNC, UHF, Banana ø2 or 4mm, DIN, Pin DIN and other on demand
Adaptors	BNC/BNC, BNC/Banana, Banana/double banana , UHF/BNC and so on
Shielded ?	Standard cords are shielded Not shielded on demand
Length	Standard: 0,16cm, 0.25cm, 1m and 2m. Any kind of length on demand
Power Cord	Fr, UK, US, CH and more on demand
Other	- Shielded Alligator clamp - Standard Alligator clamp - Temperature probe - Crystal tube

1m BNC – S7 cord:
- Shielded
- For Reference electrode

OrigaTip
Tips – Pellets

Tips from **OrigaLys** can be used with our RDE (OrigaTrod) and with the Static Electrode (StaTrod) but also with most of the RDE on the market. All the tips are in PEEK (PolyEther Ether Ketone) material.

Available Tips

Material	Diameter (mm)
316L Stainless	5
70% Copper and 30% Nickel	5
Antimony	5
Cadmium	5
Carbon Steel XC38	5
Cobalt	5
Copper	5
Glassy Carbon	3 and 5
Gold	2 and 5
Graphite	4
Iron	5
Lead	5
Nickel	5
Palladium	2
Peek	0
Platinum	2
Rhodium	2
Silver	2 and 5
Tin	5
Tungsten	1 and 4

In addition to tips, **OrigaLys** provides a whole range of sample pellets.

Main Specifications

✓ Thickness:
- For the BDD pellets: 2 mm
- For all the other pellets: 3 mm

✓ Diameter:
- 8 mm
- Or 15 mm

Available Pellets

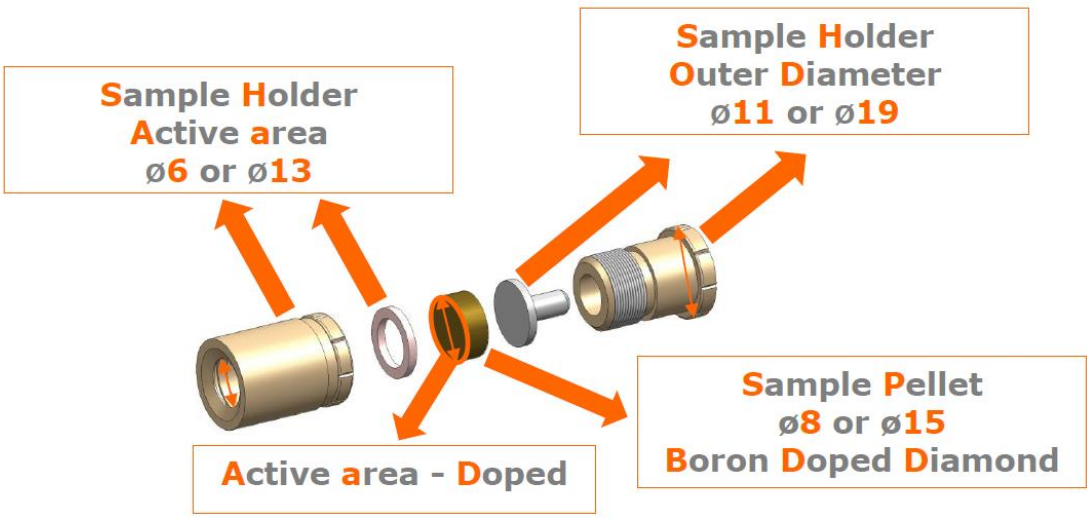
Material	Diameter (mm)
316L Stainless	8 and 15
Aluminium	8
Boron Doped Diamond (BDD)	8 and 15
Copper	8 and 15
Glassy Carbon	8 and 15
Gold	8
Graphite	8
Iron	8
Nickel	8 and 15
Platinum	8
Silver	8
Stainless Steel	8
Tungsten	8

OrigaTip
Sample Holder

Pellets from **OrigaLys** can be used with a Sample Holder, which can be adapted on the RDE (**OrigaTrod**) and on the Static Electrode (**StaTrod**) but also with most of the RDE on the market, as any kind of tips.

All the Sample Holders are in PEEK (PolyEther Ether Ketone) material.

2 different sample holders with an active area of 6 or 13 mm



StaTrod
Static Electrode

This Static Electrode can fit all the tips and sample holders from **OrigaLys**. But, with its NS 14/23 ground joints, it matches much more tips from other manufacturers.

Main Specifications

✓ Material: PEEK

✓ Length: 114 mm

✓ Diameter: 11 mm

✓ Connector: Banana plug ø4 mm

OrigaCell Kit

This Kit contains 4 elements:

1. Orange plastic cover
2. Removable Electrode Holder with LEDS
3. Adjustable and removable Beaker Holder
4. Base

OrigaCell – Corrosion Cells

The right cell for your application:

- **For Disc samples**

Thermostated cell for corrosion with sample holder for discs and platinum disc counter electrode.

- Volume = 100 to 200 ml
- Disc diameter 1.5 cm
- Disc active area 1,33 cm2
- One Pt ø10 mm disc counter electrode
- One Ag/AgCl reference electrode
- Temperature probe

- **For Flat samples**

Thermostated cell. Ideal for under coating corrosion tests. Corrosion cell for flat samples with a large surface.

- Volume = 100 to 200 ml
- Sample active Area = 22,9 cm²

Stand

This stand for RDE is composed by:
✓ A standard stand
With a robust base
The height is easily adjustable

✓ A glass cell
The volume can vary, on demand.
This cell can also be thermostated.
With its 5 holes, the cell can fit RDE, counter electrodes, working electrodes and reference electrodes made by **OrigaLys** or not.

OrigaMix

Magnetic Stirrer

✓ Exchangeable
✓ Fitting **OrigaStat**
✓ 100 to 1,500 rpm

Battery Cell Holders

Model 1

Model 2

Fitting the following batteries:
✓ Coin Cells
✓ Flat Cells
✓ Cylindrical Cells

To be used with **OrigaFlex** and **OrigaCycler**.

Main Specifications for the batteries:
✓ Thickness: 32 mm
✓ Diameter: 20 mm maximum

Main Specifications:
✓ Temperature sensor
✓ Operating temperature: -30°C to 80°C
✓ Phoenix receptacle

” Made in Know-How ”

Electrochem Origalys

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Made in EU

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Feel free to contact our local Distributor
or
our company at contact@origalys.com

Subject to change
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